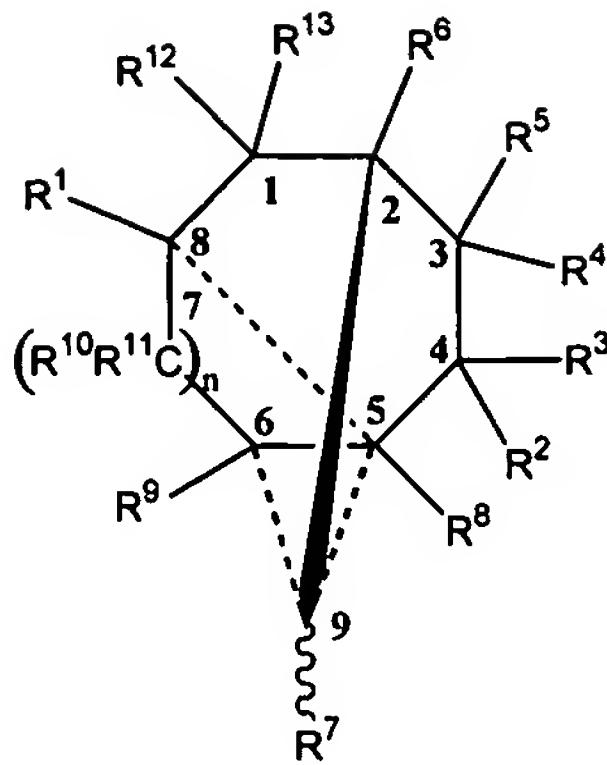


Claims

## 1. A compound of formula I



wherein

$R^1$ ,  $R^4$ ,  $R^6$  and  $R^7$  are independently hydrogen, methyl or ethyl;

$R^2$  and  $R^3$  are independently hydrogen, or  $C_{1-5}$  alkyl; or

$R^2$  and  $R^3$  together with the carbon atom to which they are attached form a 5- or 6-membered cycloalkyl ring;

$R^5$  is hydrogen, or  $C_{1-4}$  alky;

$R^8$  is hydrogen, or branched lower  $C_{3-7}$  alkyl;

$R^9$  is hydrogen, methyl , ethyl, or branched lower  $C_{3-7}$  alkyl ;

$R^{10}$  is ethyl or propyl;

$R^{11}$  is  $C_{1-4}$  alkyl;

$R^{12}$  is hydroxy;

$R^{13}$  is hydrogen, or  $C_{1-4}$  alkyl; or

$R^{12}$  and  $R^{13}$  together with the carbon atom to which they are attached form a carbonyl group;

the dashed line represents either a C-C single bond or no bond; and

- a) when C5 and C8 are connected by a single bond and C9 and C6 are connected by a single bond, C9 and C5 are not connected by a bond,  
 $n=1$ ,  
 $R^7$ ,  $R^8$  are hydrogen, and  
 $R^9$  is hydrogen, methyl or ethyl; or

b) when C5 and C8 are connected by a single bond and C9 and C6 are connected by a single bond, C9 and C5 are not connected,

$n=0$ ,

$R^7, R^8$  is hydrogen,

$R^9$  is a branched lower  $C_{3-7}$  alkyl; or

c) when C5 and C8 are not connected by a bond, C9 and C5 are connected by a single bond,

$R^7$  is hydrogen, methyl or ethyl,

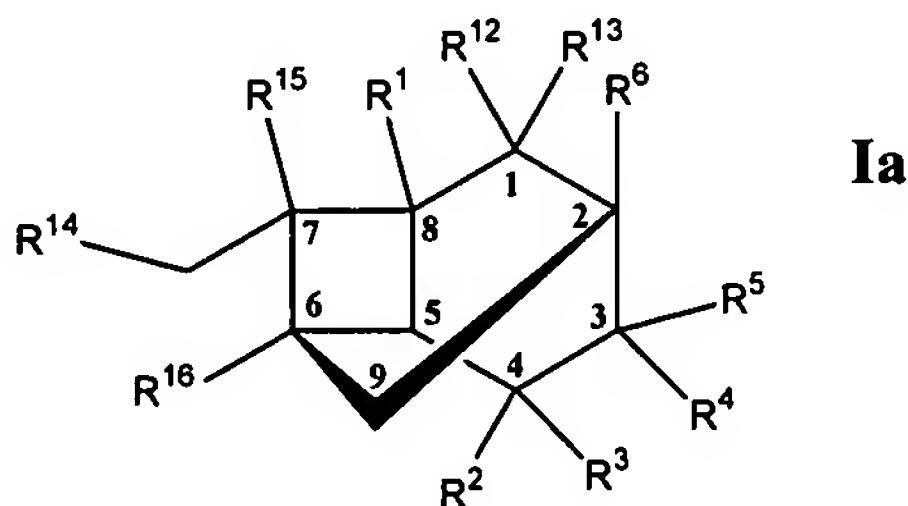
$R^8$  is a branched lower  $C_{3-7}$  alkyl, or

$R^7$  and  $R^8$  together with the carbon atoms to which they are attached form a 5- or 6-membered cycloalkyl ring,

$n = 0$ , and

the bond between C6 and C8 may be a single bond or a double bond.

2. A compound according to claim 1 having a formula Ia



wherein

$R^1, R^4, R^6, R^{14}$  and  $R^{16}$  are independently hydrogen, methyl or ethyl;

$R^2$  and  $R^3$  are independently hydrogen, or  $C_{1-5}$  alkyl; or,

$R^2$  and  $R^3$  together with the carbon atom to which they are attached form a 5- or 6-membered cycloalkyl ring;

$R^5$  is hydrogen, or  $C_{1-4}$  alkyl;

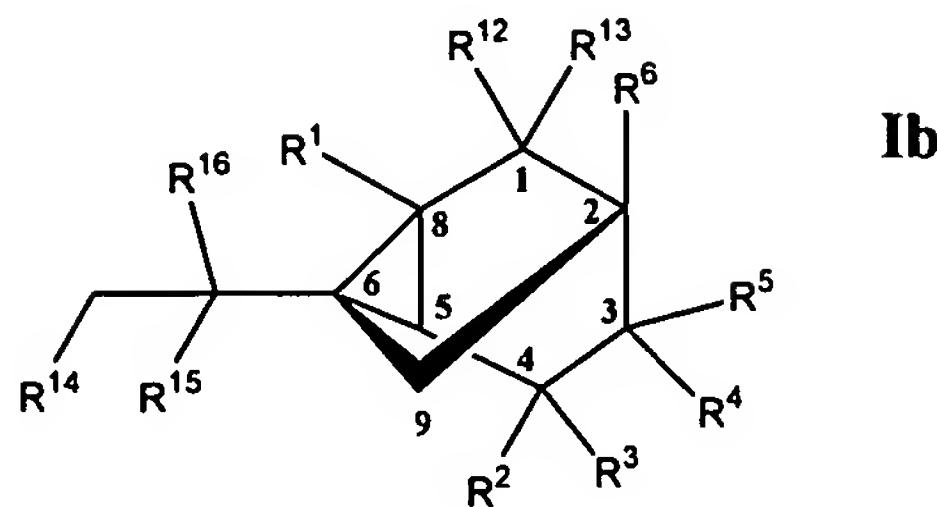
$R^{15}$  is  $C_{1-4}$  alkyl;

$R^{12}$  is hydroxy;

$R^{13}$  is hydrogen or  $C_{1-4}$  alkyl; or

$R^{12}$  and  $R^{13}$  together with the carbon atom to which they are attached form a carbonyl group.

3. A compound according to claim 1 of formula Ib,



wherein

R<sup>1</sup>, R<sup>4</sup>, R<sup>6</sup>, R<sup>14</sup> and R<sup>16</sup> are independently hydrogen, methyl or ethyl;

R<sup>2</sup> and R<sup>3</sup> are independently hydrogen, or C<sub>1-5</sub> alkyl; or,

R<sup>2</sup> and R<sup>3</sup> together with the carbon atom to which they are attached form a 5- or 6-membered cycloalkyl ring;

R<sup>5</sup> is hydrogen, or C<sub>1-4</sub> alkyl;

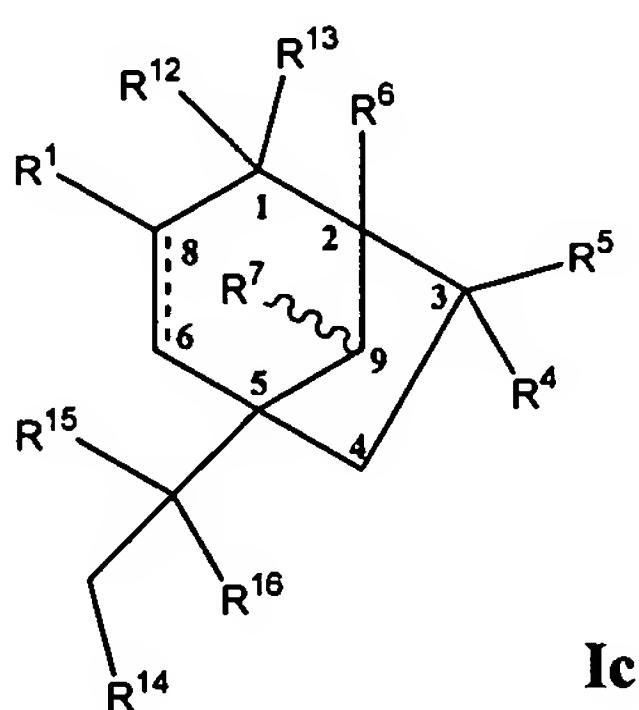
R<sup>15</sup> is C<sub>1-4</sub> alkyl;

R<sup>12</sup> is hydroxy;

R<sup>13</sup> is hydrogen or C<sub>1-4</sub> alkyl; or

R<sup>12</sup> and R<sup>13</sup> together with the carbon atom to which they are attached form a carbonyl group.

4. A compound according to claim 1 of formula Ic,



wherein

R<sup>1</sup>, R<sup>4</sup>, R<sup>6</sup>, R<sup>14</sup> and R<sup>16</sup> are independently hydrogen, methyl or ethyl;

R<sup>5</sup> is hydrogen, or C<sub>1-4</sub> alkyl;

R<sup>7</sup> and R<sup>14</sup> are independently hydrogen, methyl or ethyl; or,

R<sup>7</sup> and R<sup>14</sup> together with the carbon atoms to which they are attached form a 5- or 6-membered cycloalkyl ring;

R<sup>15</sup> is C<sub>1-4</sub> alkyl;

R<sup>12</sup> is hydroxy;

R<sup>13</sup> is hydrogen or C<sub>1-4</sub> alkyl; or

R<sup>12</sup> and R<sup>13</sup> together with the carbon atom to which they are attached form a carbonyl group; and

the bond between C6 and C8 may be a single bond;

or the dotted line together with the bond between C6 and C8 may represent a double bond.

5. A compound according to claim 1 selected from the group consisting of 1,5,7,8,8-Pentamethyl-tricyclo[3.3.1.0<sup>2,7</sup>]nonan-6-one; 1,5,7,8,8-Pentamethyl-tricyclo[3.3.1.0<sup>2,7</sup>]nonan-6-one; 1,3,3,5,7,8,8-Heptamethyl-tricyclo[3.3.1.0<sup>2,7</sup>]nonan-6-one; 3,3,5,7,8,8-Hexamethyl-tricyclo[3.3.1.0<sup>2,7</sup>]nonan-6-one; 3,3,5,8,8-Pentamethyl-tricyclo[3.3.1.0<sup>2,7</sup>]nonan-6-one; 5,7,8,8-Tetramethyl-tricyclo[3.3.1.0<sup>2,7</sup>]nonan-6-one; 1-Isopropyl-3,3,5-trimethyl-tricyclo[3.2.1.0<sup>2,7</sup>]octan-6-one; 5-Isopropyl-1,3-dimethyl-bicyclo[3.2.1]oct-3-en-2-one; 5-Isopropyl-1,3-dimethyl-bicyclo[3.2.1]octan-2-one; 5-tert-Butyl-1,3-dimethyl-bicyclo[3.2.1]oct-3-en-2-one; 5-sec-Butyl-1,3-dimethyl-bicyclo[3.2.1]oct-3-ene-2-one; 5-Isopropyl-3-methyl-bicyclo[3.2.1]oct-3-en-2-one; 5-Isopropyl-3,7,7-trimethyl-bicyclo[3.2.1]oct-3-en-2-one; 1,3,5-Trimethyl-1,5,6,7,8,8a-hexahydro-1,4a-ethano-naphthalen-2-one; and 5,6,7,8,8-Pentamethyl-tricyclo[3.3.1.0<sup>2,7</sup>]nonan-6-ol.
6. A flavour or fragrance composition comprising a compound as defined according to one of the preceding claims.
7. A flavour or fragrance composition according to claim 6 comprising at least one compound selected from the group of compounds of formula Ia as defined in claim 2 and at least one compound selected from the group of compounds of formula Ic as defined in claim 4.
8. A flavour or fragrance composition according to claim 7 comprising 5-tert-Butyl-1,3-dimethyl-bicyclo[3.2.1]oct-3-en-2-one and 1,5,7,8,8-Pentamethyl-tricyclo[3.3.1.0<sup>2,7</sup>]nonan-6-one.

9. The use of a compound as defined in one of the claims 1 to 5 in fragrance and flavour applications.

10. The use of a compound according to claim 9 in perfumes, household products, laundry products, body care products, and cosmetics.

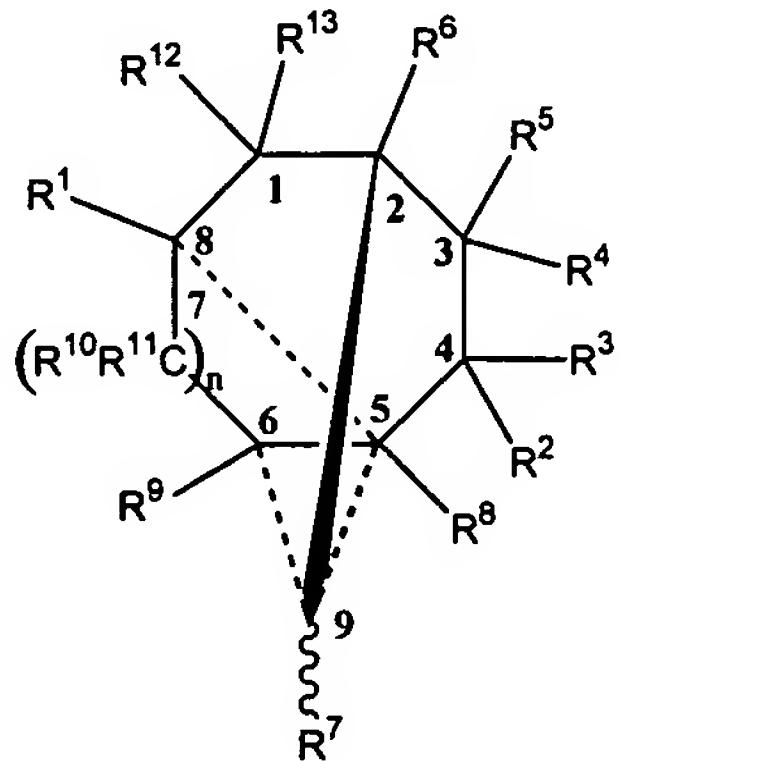
11. The use according to claim 9 and claim 10 wherein a compound is provided in an amount from 0.001 to 20% by weight.

12. A method of manufacturing a flavour or fragrance composition, comprising the step of incorporating a compound of formula I as defined in claim 1 to a base material.

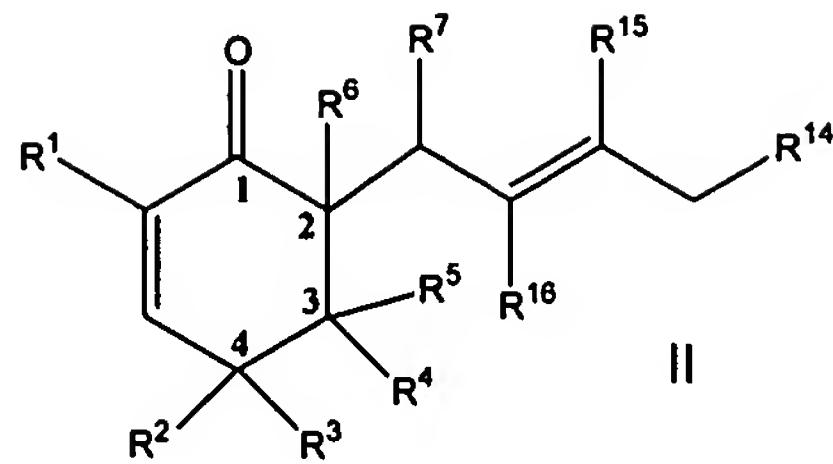
13. A method of manufacturing a fragranced application, comprising the incorporation of a compound of formula I as defined in claim 1.

14. A method according to claim 13 wherein the fragranced application is selected from the group consisting of perfume, household product, laundry product, body care product and cosmetics.

15. A process of preparing a compound of the formula I as defined in claim 1



comprising the step of reacting a compound of formula II with ethyl aluminium dichloride or methyl aluminium dichloride



wherein

$R^1$ ,  $R^4$ , and  $R^6$  are independently hydrogen, methyl or ethyl;

$R^2$  and  $R^3$  are independently hydrogen, or  $C_{1-5}$  alkyl; or

$R^2$  and  $R^3$  together with the carbon atom to which they are attached form a 5- or 6-membered cycloalkyl ring;

$R^5$  is hydrogen, or  $C_{1-4}$  alky;

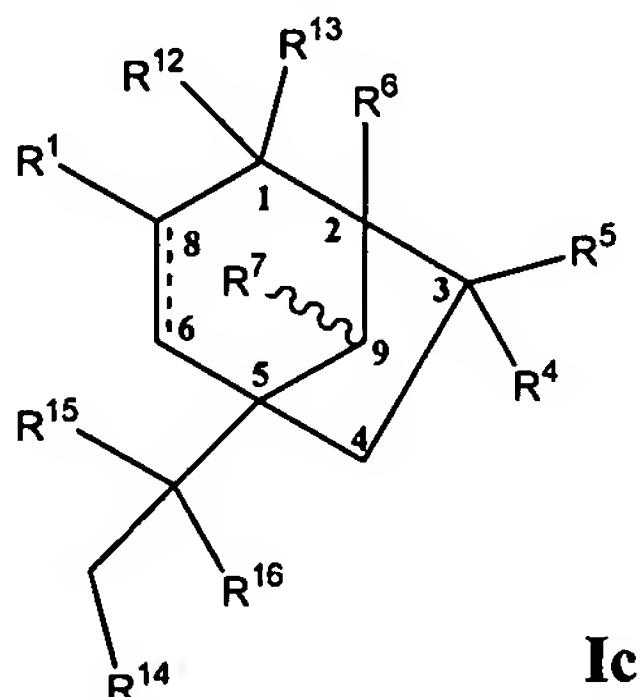
$R^7$  and  $R^{14}$  are independently hydrogen, methyl or ethyl; or

$R^7$  and  $R^{14}$  together with the carbon atoms to which they are attached form a 5- or 6-membered cycloalkane ring;

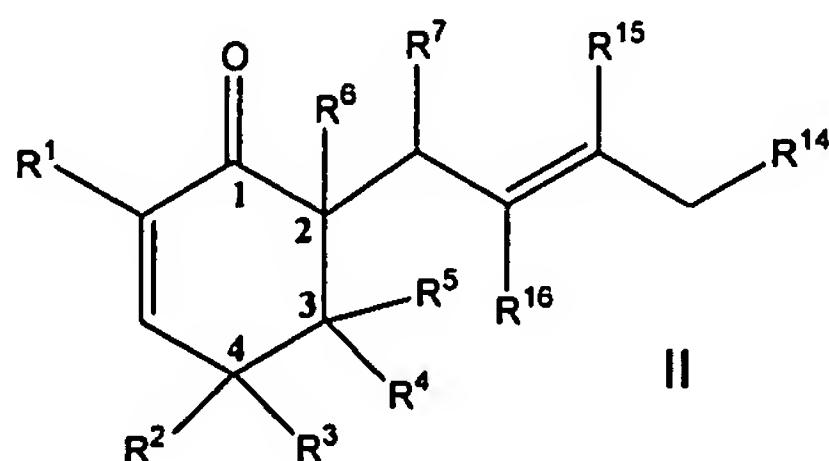
$R^{16}$  is hydrogen, or lower branched  $C_{3-7}$  alkyl,

and optionally followed by the step of reduction and/or alkylation of the carbonyl group at C1.

#### 16. A process of preparing a compound of the general formula Ic



comprising the step of converting a compound of formula II by photochemical induction



wherein

$R^2$ ,  $R^3$ , and  $R^{16}$  are hydrogen;

$R^1$ ,  $R^4$  and  $R^6$  are independently hydrogen, methyl or ethyl;

$R^7$  and  $R^{14}$  are independently hydrogen, methyl or ethyl; or

$R^7$  and  $R^{14}$  together with the carbon atoms to which they are attached form a 5- or 6-membered cycloalkane ring;

$R^5$  is hydrogen, linear or branched  $C_{1-4}$  alkyl;

$R^{15}$  is linear or branched  $C_{1-4}$  alkyl; and

and optionally followed by the step of hydrogenation across the double bond at C6 and C8, and

optionally followed by the step of reduction and/or alkylation of the carbonyl group at C1.